

Remarks

The Applicants note with appreciation the withdrawal of the multiple objections to the Claims and Specification, confirmation of receipt of the Applicants' certified copy, withdrawal of the §112, second paragraph rejection, as well as the §§102 and 103 rejections over Sakamoto. The Applicants further note with appreciation the allowance of Claims 1, 2, 5, 17, 18, 21, 34 – 36 and 38 – 48, as well as the indication that Claim 30 would be allowable if rewritten to overcome the remaining §112, second paragraph rejection.

The Applicants have amended Claim 31 to correct a minor typographical error as helpfully suggested by the Examiner. The Applicants have also amended Claim 30 to remove the confusion as to the claimed paint thickness. Claim 30 is now clear that the claimed paint thickness is about 5 μm to about 100 μm .

The Applicants respectfully request that the above amendments to Claims 30 and 31 be entered into the Official File. The Applicants note that these changes are merely ministerial in nature and do not raise new issues or cause the need for additional searching.

The Applicants note the rejection of Claim 29 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The Applicants invite the Examiner's attention to at least paragraphs [0027] and [0028] of the Specification, wherein full disclosure of the claimed subject matter of Claim 29 may be found. In particular, paragraph [0027] recites: "A Fe-Cr alloy structure containing about 6% by mass or more, but about 25% by mass or less of Cr, has, on the surface thereof including at least a gap portion, a corrosion-resistant film containing metal powder having ionization tendencies greater than iron..." This directly discloses the first two-and-a-half lines of Claim 29. The Applicants respectfully submit that one skilled in the art would understand that the corrosion-resistant film would be on the surface of the alloy structure as confirmed in

multiple locations, such as in the Applicants' Examples. Then, referring to paragraph [0028], it recites that "the remainder thereof comprise a drying agent, a hardening agent, a plasticizer, a dispersant, and an emulsifier." This directly discloses the last line-and-a-half of Claim 29. The Applicants therefore respectfully submit that the entirety of Claim 29 is disclosed in at least one location in the Applicants' Specification. Those skilled in the art can also glean that portions of the disclosure may be found in other locations in a more detailed form. The Applicants have in any event amended Claim 29 into dependent form and accordingly respectfully request withdrawal of the 35 U.S.C. §112 rejection of Claim 29.

The Applicants note the rejection of Claim 29 under 35 U.S.C. §103 over Sakamoto WO 02/099154 (USPA 2003/0196715). The Applicants note in particular the Examiner's helpful comments concerning the relevant portions of Sakamoto as it may be found in the published U.S. application. Nonetheless, the Applicants respectfully submit that Sakamoto does not render Claim 29 obvious for the reasons set forth in detail below.

Sakamoto relates to a steel sheet having at least a portion of which is coated with a film to better resist corrosion, especially in the context of fuel tanks and fuel pipes. The problems that Sakamoto attempts to overcome are a combination of tightening environmental regulations and avoidance of corrosion, especially at welded portions of the steel structure. Sakamoto's answer is a steel sheet for pipes containing 9.5 to 25 mass% Cr as the base material and a metal adhered to selected portions of the base metal in an electrically conductive manner. Such a metal is preferably Zn, Al or Mg. That methodology avoids a number of the prior art environmental problems that were encountered and, apparently, solves the problem of corrosion around welded portions.

The Sakamoto metal coating can also contain an epoxy or urethane resin. The resin is employed for the purpose of improving adhesiveness. Urethane resins are disclosed in particular as

being advantageous. Sakamoto further discloses that workability is important and, as a consequence, several precautions need to be taken. In that regard, the grain size of the metal powder in the coating film needs to be limited within a specified range. Also, Sakamoto discloses that a single liquid-type resin should be used in a urethane coating whenever possible. The coating may also include a hardening accelerator such as an amine to reduce the hardening time.

As a general matter, in considering the Sakamoto disclosure, one skilled in the art can readily see that Sakamoto seeks a simplified solution to curing both the environmental problems and the corrosion problems at welded portions. They have accordingly taken a “minimalist” approach, which includes adhering a metal such as Zn, Al or Mg onto the surface of the steel to solve the corrosion problem at the welded portions and, at the same time, utilize merely a single liquid-type urethane adhesive resin to ensure that the metal continues to adhere to the steel sheet.

Therefore, the Applicants respectfully submit that one skilled in the art would not seek to add a number of additional components to the Sakamoto film for at least the reason that addition of such additional components would potentially complicate the environmental problem that Sakamoto seeks to avoid. In particular, the Applicants’ Claim 29 recites an epoxy resin with a balance of a drying agent, a hardening agent, a plasticizer, a dispersant and an emulsifier. Various of these types of components has at least the potential to complicate the environmental situation and/or increase the cost of forming the coating, applying the coating and then working with the steel structure subsequent to such coating. This would be directly against the simplified, minimalist approach of Sakamoto.

The above “minimalist” approach can be seen throughout the Sakamoto Specification and at the locations helpfully cited by the Examiner. For example, the Abstract does not even mention ma-

terials other than the sacrificial metals that are critical to the Sakamoto disclosure. The Abstract does not mention the adhesive urethane resin.

Moving on to paragraphs [0039] and [0040] of Sakamoto, it can be seen that a coating is disclosed which “consists of” metal powder or particles and a resin. This disclosure directly speaks to the “minimalist” approach, especially by use of the critical term “consists of.” Those skilled in the art readily know that characterizing a component as “consisting of” means that other components are deliberately excluded from the item at issue. In Sakamoto, the item at issue is the coating which is limited to the metal powder and the resin. This leaves no room for additional components.

Paragraph [0040] again utilizes the critical “consisting of” language as it applies to the coating and specifies a metal powder and an isocyanate resin. Nothing else is contemplated.

Moving on to paragraphs [0068] – [0072], it can be seen that the same theme may be found. In particular, paragraph [0068] discusses the specifics of the metal powder and that it must be present in an amount of 75 mass% or more to secure electric conductivity. It also specifies the grain size of the powder to achieve effective corrosion resistance, yet maintain coating workability.

Paragraph [0069] discusses a resin that is an epoxy or a urethane. It further specifies that the urethane system is excellent in its waterproof adhesiveness and, therefore, leads those of skill in the art towards urethane films.

Paragraph [0070] refers to epoxy resins and notes that the surface of the steel sheet should be roughened to secure good adhesiveness. It notes, however, that, when a urethane system is used, it is not necessary to roughen the surface, since the urethane systems are already excellent in adhesiveness. Thus, urethanes are again disclosed as being the more preferred of the two possibilities.

Paragraph [0071] specifies that, to keep coating workability maximized, it is desirable to use “a single liquid-type resin” that is composed of an isocyanate system resin. It notes, however, that a

hardening accelerator “may be added” to shorten the hardening time. There is no other mention of any other type of additional component such as a drying agent, a plasticizer, a dispersant or an emulsifier as specifically recited in Claim 29. This is because of the Sakamoto “minimalist” approach.

Paragraph [0072] merely recites that any type of coating means may be used. It is significant, however, that there is no other mention of any type of components to be added to the film at that point in the Specification. If Sakamoto had contemplated additional components, he would most likely have added a discussion of such components at the conclusion of the discussion of the resin portion of the disclosure. However, there is no disclosure because Sakamoto intended to limit the coating to the metal and the resin for the above-stated reasons. He had no interest in utilizing additional components due to the above-mentioned potential complications.

This is confirmed by consulting the Sakamoto Examples, such as in paragraphs [0080] – [0086] and Table 3. That text discloses a coating that includes alloy powders and an isocyanate. No other components are added and no other components are contemplated. This is, again, all in keeping with the “minimalist” approach that is central to the success of Sakamoto. The Applicants also note that Example 3 employs a similar isocyanate coating.

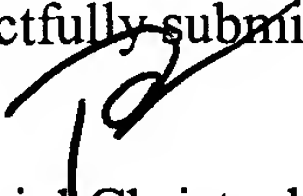
The Applicants, therefore, respectfully submit that Sakamoto in no way contemplated additional components such as the specifically claimed drying agent, plasticizer, dispersant and emulsifier of the Applicants’ Claim 29. The reason is that Sakamoto led those skilled in the art to believe that such components are unnecessary. The implication of Sakamoto is also that additional components would potentially stand in the way of achieving one of the goals of Sakamoto, which is to avoid environmental regulation problems. The Applicants, therefore, respectfully submit that one skilled in the art would have no reasons to modify Sakamoto by adding any or all of the drying agent, plasticizer, dispersant and emulsifier of the Applicants’ Claim 29. Moreover, there is nothing that

would lead one skilled in the art to have a reasonable expectation of success that such an addition to the Sakamoto coating would or could provide any benefit. There simply are no such teachings or suggestions in Sakamoto. As a consequence, the Applicants respectfully submit that one skilled in the art would not make the modifications as suggested in the rejection. Withdrawal of the rejection is accordingly respectfully requested.

There is another problem with Sakamoto. It is fundamental that a rejection relying on a prior art disclosure must be “enabling.” The Applicants respectfully submit that Sakamoto is not enabling as prior art against Claim 29. The reason for this is that Sakamoto fails to disclose in any way a drying agent, a plasticizer, a dispersant and an emulsifier as specifically recited in Claim 29. Without such a disclosure, the Applicants respectfully submit that Sakamoto is not enabled and is not effective prior art against Claim 29. The Applicants therefore respectfully further request that the rejection be withdrawn.

In light of the foregoing, the Applicants respectfully submit that the entire Application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,


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